



Penn E&R

Environmental & Remediation, Inc.



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April 26, 2001
4013-20001

Mr. Joseph McDowell
Remedial Project Manager
United States Environmental
Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

and

Mr. Dave Minsker
Hazardous Site Cleanup Program
Pennsylvania Department of
Environmental Protection
Southeast Regional Office
Lee Park, Suite 6010
555 North Lane
Conshohocken, PA 19428

Subject: Proposed Site Characterization Activities for the Cinder/Slag Fill Area Located on LPT's Yellow Parcel

Dear Mr. McDowell and Mr. Minsker:

This letter is being submitted in response to our April 25, 2001 meeting where we discussed Liberty Property Trust's (LPT's) proposed remedial design for the cap to be installed over the cinder/slag fill area located on LPT's Yellow Parcel. As discussed, both the EPA and PADEP would like to see additional characterization of the fill prior to the installation of the proposed cap. This letter outlines the site characterization activities that are proposed for implementation in the cinder/slag fill area.

BACKGROUND INFORMATION

As part of LPT's due diligence survey, an area of fill material was identified in the northwest portion of their 2301 Renaissance Boulevard property. The approximate location of this fill area is shown on Figure 1. As part of the investigation of this material, nine test trenches were installed into this area at the approximate locations shown on Figure 1. Based on information obtained from the test trenches, the material in this area consists primarily of glass, ash, cinders, and slag. The surface expression of the fill encompasses an area, on average, about 150 feet long by 200 feet wide and the

fill is up to 10 feet thick. There is approximately 3,000 cubic yards of fill located in this area. The source of the fill is not known, however, based on historical aerial photographs, it was placed in this area prior to 1959.

To evaluate the chemical makeup of the fill, Penn E&R collected a grab soil sample from test trench FT-3. This sample, which was designated FT-3, was collected from material that appeared to be most representative of the fill and from an area where elevated PID readings were detected. The sample was analyzed for the Target Compound (TCL) volatile and semivolatile organic compounds and the TAL inorganics (i.e., metals and cyanide).

The results of the analysis of this sample are summarized in Table 1. In evaluating the fill sample results, the data were compared to Act 2 non-residential soil-to-groundwater MSCs and USEPA generic soil-screening-levels (SSLs). A review of Table 1 shows that no volatile or semivolatile organic compounds are present in the fill above Act 2 MSCs or USEPA SSLs. With the exception of arsenic and lead, no metals are present in the fill above Act 2 non-residential soil-to-groundwater MSCs or USEPA generic SSLs. Arsenic was detected above its very restrictive USEPA generic SSL of 0.026 mg/kg but not above its Act 2 non-residential soil-to-groundwater MSC. Lead was detected above both its Act 2 MSC and USEPA generic SSL.

To further characterize the fill material in the cinder/slag fill area, Penn E&R also collected one representative composite sample (sample FAA-5C/5G) of the fill material. This sample was collected by first dividing the fill area into four quadrants (Quadrants FAA-1 through FAA-4 as shown on Figure 2). Two sample aliquots from each quadrant were then collected at various depths. The individual sample aliquots were then thoroughly homogenized in a decontaminated stainless steel mixing bowl. A composite sample from the mixing bowl was then collected and placed directly into laboratory supplied sample bottles. This sample was designated FAA-5C/5G and was analyzed for the PADEP Form U Table A parameters. The volatile fraction of this sample (FAA-5C) was collected as a grab from the aliquot that displayed the highest volatile organic reading based on screening with a photoionization detector. Penn E&R also collected one individual composite sample from each of the four quadrants. These samples were designated FAA-1 through FAA-4 (see Figure 2) and each consisted of a composite of five individual aliquots collected from various depths from its corresponding quadrant. As an example, sample FAA-1 consisted of a composite of the five aliquots collected from quadrant FAA-1 and sample FAA-2 consisted of a composite of the five aliquots collected from quadrant FAA-2. As lead was identified as the only contaminant of concern for potential leachability, these samples were analyzed for TCLP lead.

The results of the analysis of sample FAA-5C/5G and samples FAA-1 through FAA-4 are included in Attachment 1. A review of Attachment 1 indicates that none of the PADEP Form U Table A parameters were detected above any EPA regulatory levels in sample FAA-5C/5G and TCLP lead was not detected above its EPA regulatory level in samples FAA-1 through FAA-4.

Two additional composite samples were collected from the fill pile. These samples were collected by first dividing the fill pile into two sections (Sections FAC-10 and FAC-11 as shown on Figure 3). Four sample aliquots from various depths were then collected from each section. The four individual

sample aliquots representing one of the sections were then thoroughly homogenized in a decontaminated stainless steel mixing bowl. A composite sample representative of the two sections was collected in this manner. These two samples were designated FAC-10 and FAC-11 and were analyzed for the TCLP metals, and PCBs and total petroleum hydrocarbons (TPHs). A copy of the results of the analysis of these samples is included in Attachment 2. A review of these results indicates that none of the TCLP metals were detected above their EPA regulatory levels in the two samples. Also, no PCBs were detected above laboratory detection limits in the two samples and each sample displayed a low TPH level of less than 210 mg/kg.

Based on the characterization sample results, the fill material in the cinder/slag fill area is not characteristically hazardous.

SCOPE OF WORK

The proposed site characterization will consist of the implementation of the following three tasks:

- Task 1 - Confirmation of the Limits of the Cinder/Slag Fill Area
- Task 2 - Collection of Representative Samples of the Cinder/Slag Fill
- Task 3 - Summary Report of Findings

The activities to be completed as part of the implementation of these tasks are discussed below.

Task 1 - Confirmation of the Limits of the Cinder/Slag Fill Area

As part of the Task 1 activities, Penn E&R will mobilize a backhoe to the site to install test trenches around the perimeter of the cinder/slag fill area. The results of the Task 1 activities will be used to confirm the limits and delineate the area to be subsequently included under the Cap.

Penn E&R currently envisions installing from ten to fifteen test trenches around the perimeter of the cinder/slag fill area. The initial test trenches will be located outside but within five feet of the expected extent of the cinder/slag fill area. The soil at each test trench location will be excavated and placed directly onto plastic sheeting. The test trenches will be excavated to a depth of at least five feet below the ground surface (BGS). The excavated soils will be visually inspected for evidence of fill. If fill is encountered, excavation at that location will be stopped and another test trench will be installed five feet further out from the trench in which fill was visually observed. This process will be continued until the limits of the cinder/slag fill area have been delineated. After the limits of the area have been delineated, the limits of the slag/fill area will be flagged. The exact boundaries of the cinder/slag fill area will then be surveyed and located on a scaled site map. Surveyed locations will be accurate within 0.05 feet on a horizontal basis and 0.01 feet on a vertical basis.

Task 2 - Collection of Representative Samples of the Cinder/Slag Fill

Prior to the implementation of the Task 2 activities, Penn E&R will construct a temporary decontamination pad. All vehicles that come in direct contact with the materials in the cinder/slag fill area will be decontaminated on the pad prior to leaving the area or the site. The pad will be constructed of a sufficient thickness of PVC and will be covered with plywood to ensure that the liner is not torn by the equipment. The pad will be constructed in such a way that the small amount of wash water generated will drain back to the cinder/slag fill area.

To supplement the existing chemical analytical data that exists for the cinder/slag fill area, Penn E&R will install six additional test trenches through the fill area. The exact locations at which these test trenches will be installed will be determined in the field after completion of the Task 1 activities. However, at least one test trench will be installed in each of the four equal quadrants into which this area will be divided. The two other test trenches will be installed at randomly selected location to ensure that the vertical and horizontal extent of the fill has been evaluated.

(MMP) As part of the installation of the test trenches, the fill material excavated will be visually inspected and screened for the presence of volatile organic vapors with a photoionization detector (PID). The excavated materials from each trench will be placed on plastic sheeting. To confirm the field screening results, one sample from each test trench will be collected and submitted for laboratory analysis. The samples submitted for analysis will be those that display elevated PID readings. Also, samples will be collected at various depths from the six test trenches to ensure that a vertical characterization of the fill materials is completed. The six samples collected for analysis will be submitted to GLA Laboratories, a PADEP-certified laboratory located in King of Prussia, PA for analysis of the Target Compound List (TCL) volatile and semivolatile organic compounds and for the Target Analyte List (TAL) inorganics (i.e., metals and cyanide).

Upon completion of the test trenching activities, the excavated fill will be placed back into the trench from which it was removed. The test trench installation and sampling activities will be completed by Penn E&R OSHA-trained environmental technicians.

As indicated earlier, the primary contaminant of concern in the cinder/slag area is lead. This was also the primary contaminant of concern detected in Quarry No. 4. The maximum concentration at which lead was detected in the cinder/slag fill area was similar to the maximum concentration detected in Quarry No. 4 (i.e., just above 2,000 mg/kg). Penn E&R previously developed a Site-Specific Health and Safety Plan (SSHSP) for intrusive work completed/planned to be completed in Quarry No. 4. Since the contaminants of concern in Quarry No. 4 are similar to those in the cinder/slag fill area, all work in the cinder/slag fill area will be completed following the procedures and guidelines included in the document prepared by Penn E&R and entitled "Site-Specific Health & Safety Plan For Work Being Completed at Quarry No. 4 at Liberty Property Trust's 2201/2301 Renaissance Boulevard Properties, Upper Merion Township, Montgomery County, PA," dated April 20, 2001.

Mr. Joseph McDowell
Mr. Dave Minsker
April 26, 2001
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Task 3 - Summary Report of Findings

Upon completion of the Task 1 and Task 2 activities, Penn E&R will develop a summary report of findings. This report will include a detailed discussion of the site characterization activities implemented and the results of these activities. Scaled site maps will be provided that show the surveyed location of the cinder/slag fill area and all test trench and sample locations. The analytical data will be tabulated and compared to EPA generic Risk Based Concentrations/Soil-Screening-Levels and PADEP Act 2 non-residential MSCs. The report will be submitted to EPA and PADEP for review.

As discussed at our meeting, LPT would like to install the cap over this area as soon as possible so as not to impact their overall construction schedule. Therefore, we plan to implement the site characterization activities outlined in this letter starting on Wednesday, May 2, 2001.

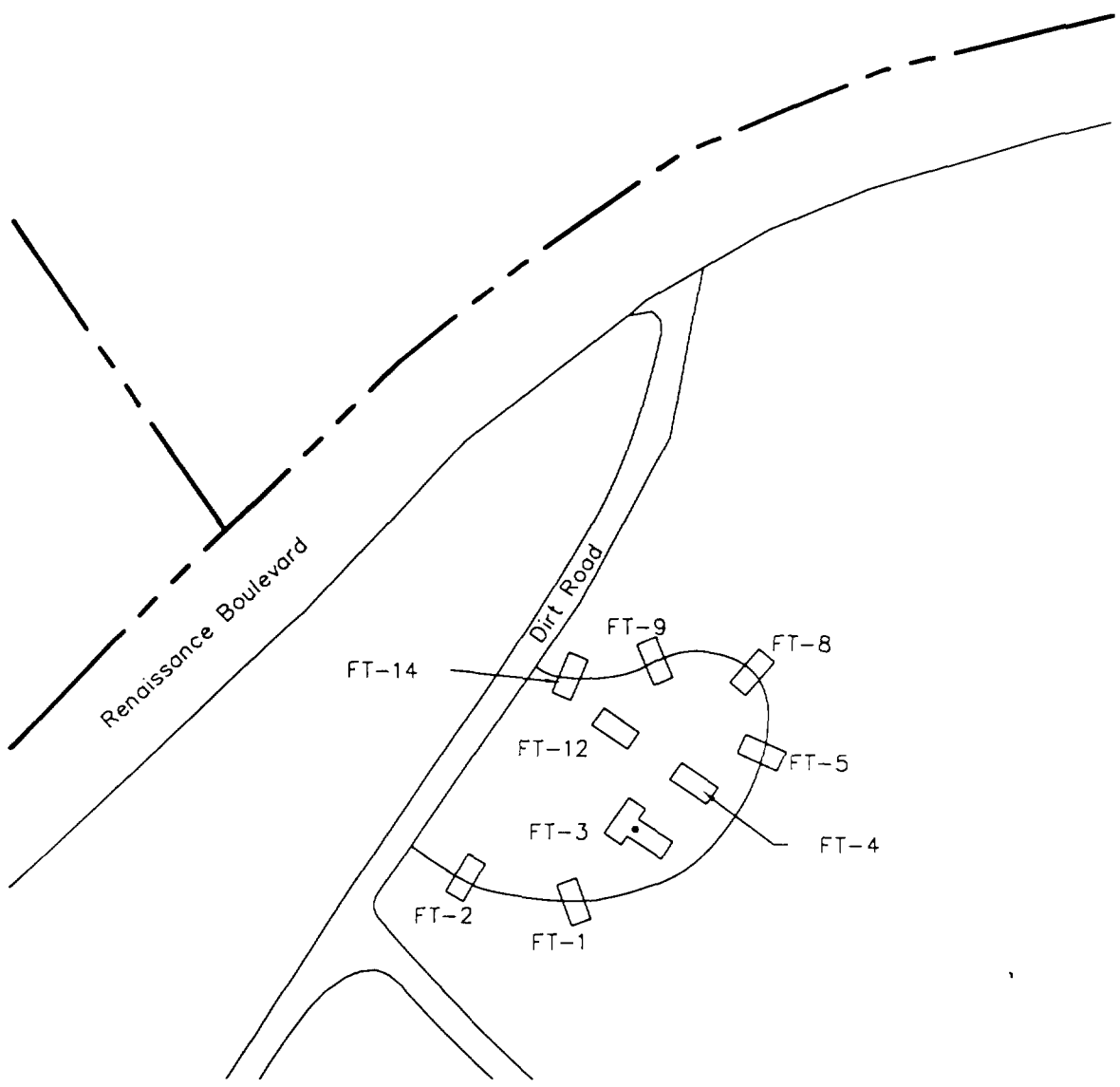
Should you have any comments regarding this letter or any other-project related issues, or if you require additional information, please do not hesitate to call me.

Sincerely,
PENN ENVIRONMENTAL & REMEDIATION, INC.



Michael A. Christie, P.E.
Vice President

MAC:dlc
4013:scwpcsf

cc: Andy Duchovany, Esq., EPA (w/enclosures)
Andy Hartzell, Esq., PADEP (w/enclosures)
George Donyliw, PADEP (w/enclosures)
Jim Wentzel, PADEP (w/enclosures)
Joe Bartlett, UMT (w/enclosures)
Andy Frebowitz, TTNUS (w/enclosures)
Bruce Hartlein, LPT (w/enclosures)
Jim Sunday, LPT (w/enclosures)
Brenda Gotanda, Esq., MGK (w/enclosures)
Darryl Borrelli, MGK (w/enclosures)





Notes:

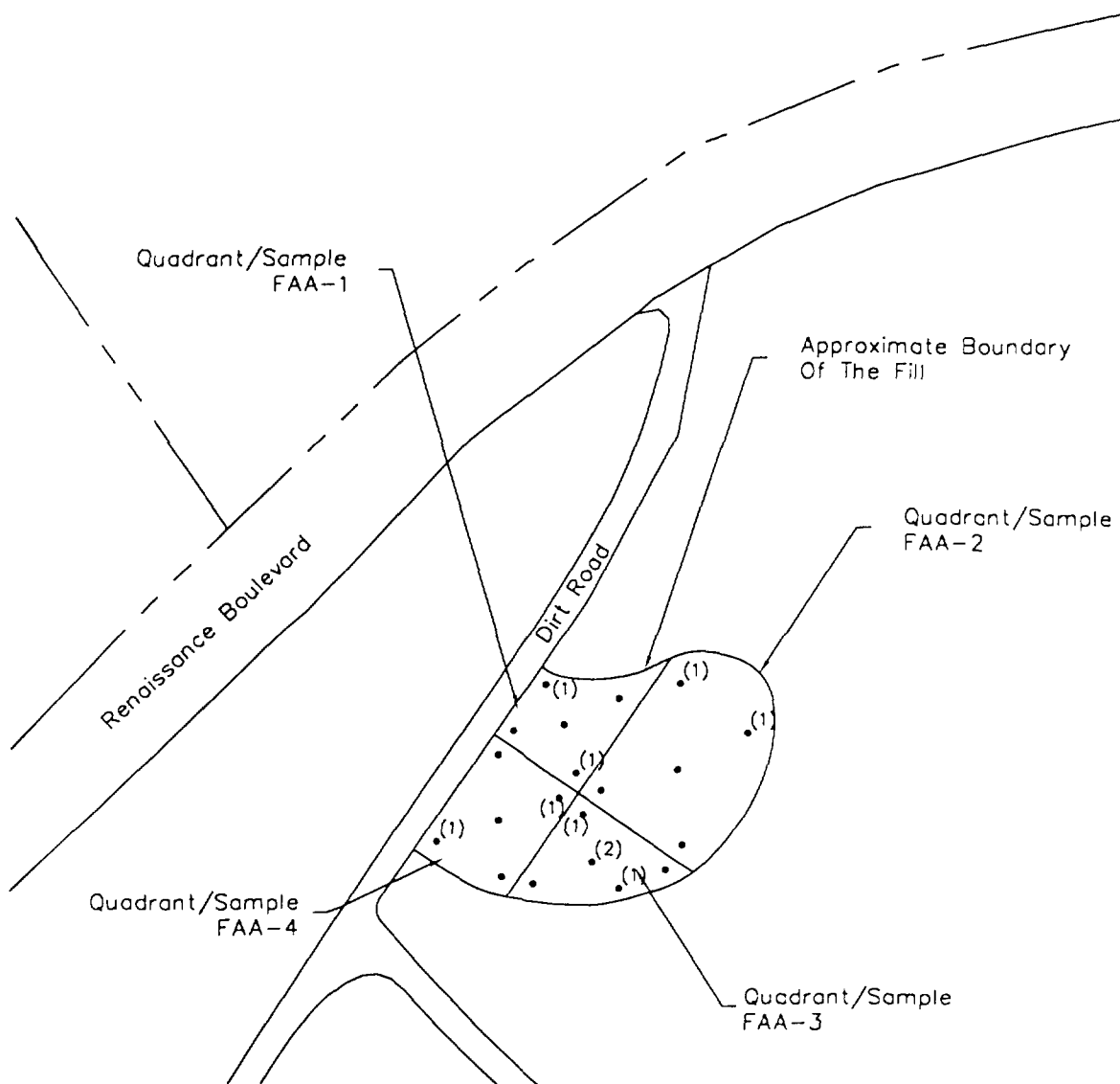
 Approximate Location of Test Trench
 FT-2

• Approximate Location of Sample
 FT-3

Figure 1

Map Showing the Approximate Locations of Test Trenches Installed Through the Cinder/Slag Fill Area

| | | | |
|--|--|---|---------------|
| DRAWN BY: SMD | | DATE: 15-Nov-00 | SCALE: N.T.S. |
|  | |  Penn E&R Environmental & Remediation, Inc. 2755 Bergey Road Hatfield, Pennsylvania 19440 215-997-9000 fax-215-822-8575 | |



Notes:

- Individual Sample Aliquot Location
- (1) These sample aliquots were composited to form sample FAA-5C/5G
- (2) This is the location at which the volatile organic fraction of sample FAA-5C/5G was collected

Figure 2

Map Showing Approximate Locations At Which Sample Aliquots For Samples FAA-1 Through FAA-4 Were Collected From the Cinder/Slag Fill Area

DRAWN BY: SMD DATE: 15-Nov-00 SCALE: N.T.S.



Penn E&R
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2755 Bergey Road
Hatfield, Pennsylvania 19440
215-997-9000 Fax-215-822-8575

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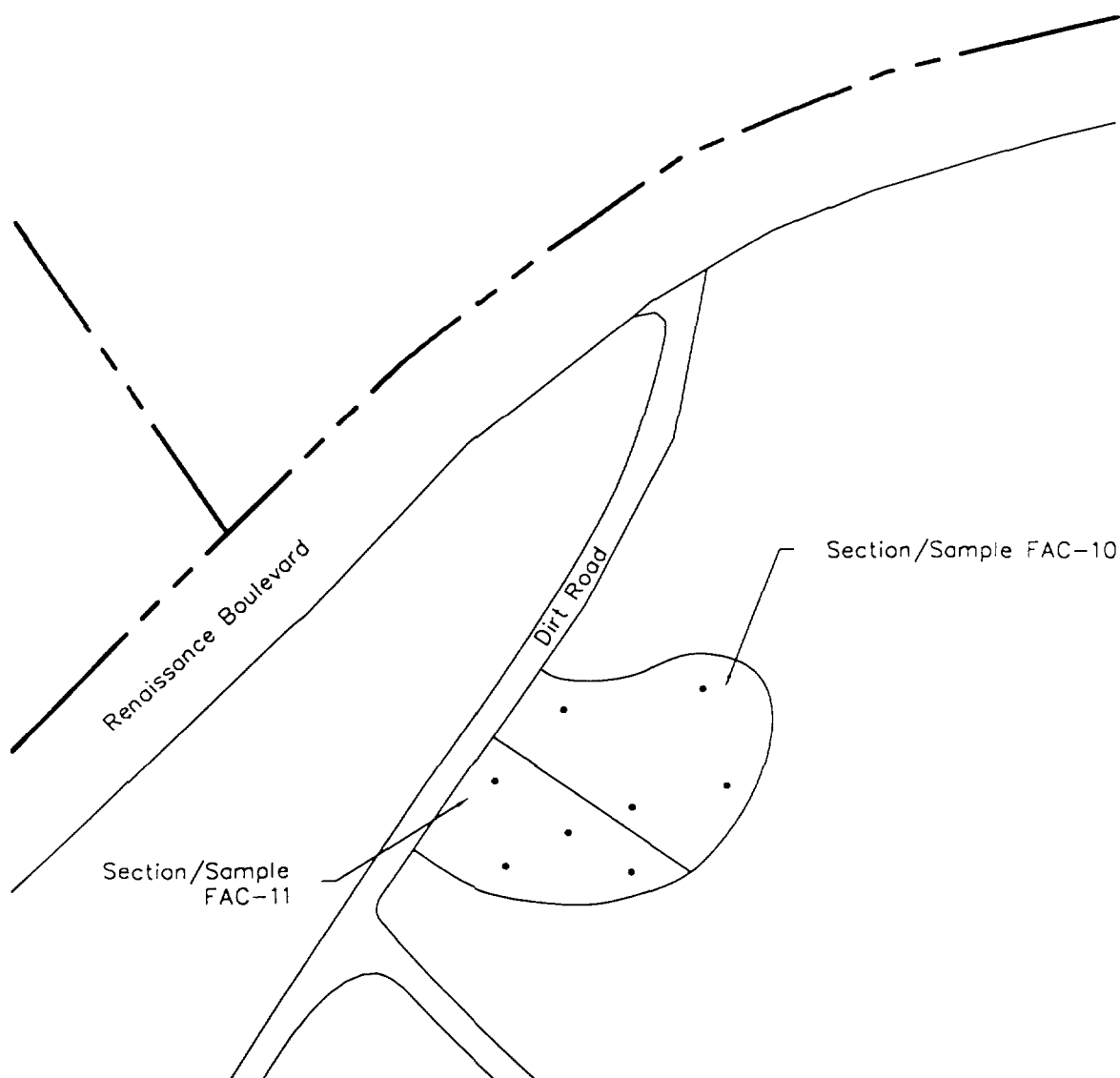


Figure 3
Map Showing Approximate
Locations At Which Sample
Aliquots for Samples FAC-10 and
FAC-11 Were Collected From
The Cinder/Slag Fill Area

| | | |
|-----------|-----------|--------|
| DRAWN BY: | DATE: | SCALE: |
| SMD | 15-Nov-00 | NTS |

Notes:

- Approximate Location Of Individual Sample Aliquots



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TABLE 1
SUMMARY OF ANALYTICAL RESULTS FOR THE SAMPLE
COLLECTED FROM THE SLAG/CINDER FILL AREA

| ANALYTICAL PARAMETERS | SAMPLE DESIGNATION/ ANALYTICAL RESULTS ⁽¹⁾ | PADEP NSRG MSC ⁽²⁾ | USEPA SG SSL ⁽³⁾ |
|---|--|-------------------------------------|--------------------------------|
| | FT-3 | | |
| <i>Volatile Organics⁽⁴⁾:</i> | | | |
| Methylene Chloride | 0.012JB | 0.5 | 0.019 |
| <i>Semivolatile Organics⁽⁴⁾:</i> | | | |
| Acenaphthylene | <0.44 | 4,400 | NSA |
| Anthracene | <0.44 | 230 | 470 |
| Benzo(a)anthracene | 0.25J | 320 | 1.5 |
| Benzo(b)fluoranthene | 0.34J | 160 | 4.5 |
| Benzo(k)fluoranthene | 0.079J | 600 | 4.5 |
| Benzo(g,h,i)perylene | 0.24JB | 180 | NSA |
| Benzo(a)pyrene | 0.24JB | 46 | 0.37 |
| Bis(2-ethylhexyl)phthalate | 0.39J | 130 | 2,900 |
| Carbazole | <0.44 | NSA | NSA |
| Chrysene | 0.27J | 220 | 150 |
| Dibenzo(a,h)anthracene | 0.074J | 160 | 1.4 |
| Fluoranthene | 0.34J | 3,300 | 6,300 |
| Fluorene | <0.44 | 380 | 140 |
| Indeno(1,2,3-cd)pyrene | 0.21J | 28,000 | 22 |
| Naphthalene | <0.44 | 10 | 0.15 |
| Phenanthrene | 0.13J | 11,000 | NSA |
| Pyrene | 0.31J | 220 | 680 |
| <i>Inorganics⁽⁴⁾:</i> | | | |
| Aluminum | 13800 | NSA | NSA |
| Antimony | 7.4C | 27 | 13 |
| Arsenic | 19.8 | 150 | 0.026 |
| Barium | 996 | 8,200 | 2,100 |
| Beryllium | 0.54C | 320 | 1,200 |
| Cadmium | 8.2 | 38 | 27 |
| Calcium | 29400 | NSA | NSA |
| Chromium | 67.5 | 190,000 | 2x10 ⁹ |
| Cobalt | 16.4 | 610 | NSA |
| Copper | 401 | 36,000 | 11,000 |
| Iron | 75900 | NSA | NSA |
| Lead | 2390 | 450 | NSA |
| Magnesium | 4690 | NSA | NSA |
| Manganese | 744 | NSA | 950 |
| Mercury | 0.25 | 10 | NSA |
| Nickel | 92.0 | 650 | NSA |
| Potassium | 2100 | NSA | NSA |
| Selenium | <0.72 | 26 | 19 |
| Silver | 3.1 | 84 | 31 |
| Sodium | <52.5 | NSA | NSA |
| Thallium | 0.78C | 14 | 3.6 |

TABLE 1 - CONTINUED

SUMMARY OF ANALYTICAL RESULTS FOR THE SAMPLE
COLLECTED FROM THE SLAG/CINDER FILL AREA

| ANALYTICAL PARAMETERS | SAMPLE DESIGNATION/ ANALYTICAL RESULTS ⁽¹⁾ | PADEP NSRG MSC ⁽²⁾ | USEPA SG SSL ⁽³⁾ |
|--------------------------|--|-------------------------------------|--------------------------------|
| | FT-3 | | |
| Vanadium | 28.0 | 71,508 ⁽⁴⁾ | 5,100 |
| Zinc | 5620 | 12,000 | 14,000 |
| Cyanide | <1.33 | 200 | 150 |

Notes:

- (1) - All results are in milligrams per kilogram
- (2) - Pennsylvania Department of Environmental Protection, Land Recycling and Environmental Remediation Standards Act (Act 2), Non-Residential Used Aquifer Soil-to-Ground Water Medium Specific Concentration (August 1997)
- (3) - United States Environmental Protection Agency, Region III, RBC Table, Soil-to-Ground Water Soil Screening Levels, DAF-20 (April 2000)
- (4) - Only those volatile or semivolatile organic compounds which were detected above the method limit are shown
- (5) - The current MSC developed for vanadium was incorrectly calculated. The PADEP is aware of this error. The MSC listed for vanadium was calculated using the correct toxicological data.
- PADEP - Pennsylvania Department of Environmental Protection
- NRSG - Non-Residential Soil-to-Ground Water
- MSC - Medium Specific Concentration
- USEPA - United States Environmental Protection Agency
- SG - Soil-to-Ground Water
- SSL - Soil Screening Level
- J - Compound was detected below the method detection limit and the reported concentration should be considered an estimate.
- B - This result is qualitatively invalid because the compound/analyte was also detected in a blank at a similar concentration.
- C - The result is between the estimated quantitation limit and the instrument detection limit
- <0.44 - Compound was not detected above the listed method detection limit
- NSA - No Standard Available
- Bold** - Indicates compound was detected above either its PADEP MSC or USEPA SSL

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ATTACHMENT 1
RESULTS FOR SAMPLES FAA-5C/5G AND FFA-1 THROUGH FAA-4

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract FAA-5G
Analysis Method: EPA 8260
Lab Number: 803-1404

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Mar 31, 1998
Analyzed: Apr 5, 1998
Reported: Apr 7, 1998

TCLP VOLATILES

| Analyte | Detection Limit mg/L | Sample Results mg/L |
|---------------------------|-------------------------|------------------------|
| Benzene..... | 0.40 | N.D. |
| Carbon tetrachloride..... | 0.40 | N.D. |
| Chlorobenzene..... | 0.40 | N.D. |
| Chloroform..... | 0.40 | N.D. |
| 1,2-Dichloroethane..... | 0.40 | N.D. |
| 1,1-Dichloroethylene..... | 0.40 | N.D. |
| Methyl ethyl ketone..... | 100 | N.D. |
| Tetrachloroethylene..... | 0.40 | N.D. |
| Trichloroethylene..... | 0.40 | N.D. |
| Vinyl chloride..... | 0.16 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract FAA-5C
Analysis Method: EPA 8270
Lab Number: 803-1405

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Mar 31, 1998
Analyzed: Apr 2, 1998
Reported: Apr 7, 1998

TCLP SEMI-VOLATILES

| Analyte | Detection Limit mg/L | Sample Results mg/L |
|-------------------------------|-------------------------|------------------------|
| o-Cresol..... | 20 | N D. |
| m-, p-Cresol..... | 20 | N D |
| Cresol..... | 20 | N D |
| 1,4-Dichlorobenzene..... | 0.75 | N D |
| 2,4-Dinitrotoluene..... | 0.013 | N D |
| Hexachlorobenzene..... | 0.013 | N D. |
| Hexachloro-1,3-butadiene..... | 0.050 | N D |
| Hexachloroethane..... | 0.30 | N D |
| Nitrobenzene..... | 0.20 | N D |
| Pentachlorophenol..... | 10 | N D |
| Pyridine..... | 0.50 | N D |
| 2,4,6-Trichlorophenol..... | 40 | N D |
| 2,4,6-Trichlorophenol..... | 0.20 | N D |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: Soil FAA-5C
Analysis Method: EPA 8081
Lab Number: 803-1405

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Apr 2, 1998
Analyzed: Apr 2, 1998
Reported: Apr 7, 1998

POLYCHLORINATED BIPHENYLS (EPA 8081)

| Analyte | Detection Limit µg/kg | Sample Results µg/kg, dry wt |
|---------------|--------------------------|---------------------------------|
| PCB 1016..... | 100 | N.D. |
| PCB 1221..... | 100 | N.D. |
| PCB 1232..... | 100 | N.D. |
| PCB 1242..... | 100 | N.D. |
| PCB 1248..... | 100 | N.D. |
| PCB 1254..... | 100 | N.D. |
| PCB 1260..... | 100 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract FAA-5C
Method of Analysis EPA 8080
Lab Number: 803-1405

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Mar 31, 1998
Analyzed: Apr 1, 1998
Reported: Apr 7, 1998

TCLP PESTICIDES

| Analyte | Detection Limit mg/L | Sample Results mg/L |
|------------------------------------|-------------------------|------------------------|
| Chlordane..... | 0.0030 | N.D. |
| Endrin..... | 0.0020 | N.D. |
| Heptachlor (and its epoxide)..... | 0.00080 | N.D. |
| Lindane..... | 0.040 | N.D. |
| Methoxychlor..... | 1.0 | N.D. |
| Toxaphene..... | 0.050 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES


Crystal Pollock
Laboratory Director



1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406

(610) 337-9992 FAX (610) 337-9339

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract FAA-5C
Method of Analysis EPA 8150
Lab Number: 803-1405

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Apr 14, 1998
Analyzed: Apr 14, 1998
Reported: Apr 14, 1998

TCLP HERBICIDES

| Analyte | Detection Limit mg/L | Sample Results mg/L |
|-------------------------|-------------------------|------------------------|
| 2,4,5-TP (Silvex) | 0.10 | N.D. |
| 2,4-D | 1.0 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES

Crystal Pollock
Laboratory Director

GLA LABORATORIES

1008 W. Ninth Avenue • King of Prussia, Pennsylvania 19406

(610) 337-9992 FAX (610) 337-9929

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Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract
FAA-5C
Lab Number: 803-1405

Sampled: Mar 24, 199
Received: Mar 27, 199
Extracted: Mar 31, 199
Analyzed: Apr 1, 199
Reported: Apr 7, 199

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

| Analyte | EPA Method | Detection Limit mg/L (ppm) | Sample Results mg/L (ppm) |
|---------------|------------|-------------------------------|------------------------------|
| Arsenic..... | 3010/7060 | 0.50 | N.D. |
| Barium..... | 3010/7080 | 10 | N.D. |
| Cadmium..... | 3010/7130 | 0.10 | N.D. |
| Chromium..... | 3010/7190 | 0.20 | N.D. |
| Lead..... | 3010/7420 | 0.50 | N.D. |
| Mercury..... | 7470 | 0.02 | N.D. |
| Selenium..... | 3010/7740 | 0.10 | N.D. |
| Silver..... | 3010/7760 | 0.50 | N.D. |
| Copper..... | 3010/7210 | 0.20 | N.D. |
| Nickel..... | 3010/7520 | 0.20 | N.D. |
| Zinc..... | 3010/7950 | 0.20 | 50.0 |

Analytes reported as N.D. were not present above the stated limit of detection

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: Soil
FAA-5C
Lab Number: 803-1405

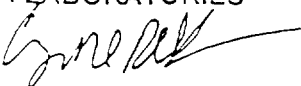
Sampled: Mar 24, 1998
Received: Mar 27, 1998
Analyzed: Mar27-Apr6, 1998
Reported: Apr 8, 1998

LABORATORY ANALYSIS

| Analyte | EPA Method | Detection Limit mg/kg | Sample Results mg/kg |
|-----------------------|------------|--------------------------|-------------------------|
| Flashpoint..... | 1010 | N/A | >200F |
| pH..... | 9045 | N/A | 7.59 pH |
| Paint filter..... | 9095 | N/A | Pass |
| Total solids..... | 160.3 | 10 | 71 (%) |
| Volatile solids..... | 160.4 | 10 | 127340 |
| Oil and grease..... | 413.1 | 30 | 767 |
| Reactive cyanide..... | 7.3.3 | 0.25 | N D |
| Reactive sulfide..... | 7.3.4 | 6.5 | 12 |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:

Client Project ID: LPT
Sample Descript: ASTM Leachate
FAA-5C
Lab Number: 803-1405

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Analyzed: Mar30-Apr7, 1998
Reported: Apr 8, 1998

LABORATORY ANALYSIS

| Analyte | EPA Method | Detection Limit mg/L | Sample Results mg/L |
|---------------------|------------|-------------------------|------------------------|
| COD..... | 410.4 | 100 | N.D. |
| Ammonia..... | 350.1 | 0.10 | 0.17 |
| Oil and Grease..... | 413.1 | 5.0 | N.D. |
| Total Solids..... | 160.3 | 10 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES


Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention:
Mike Christie

Client Project ID: LPT
Sample Descript: Water
Analysis for: TCLP Lead 1311/3010/7420
First Sample #: 803-1400

Sampled: Mar 24, 1998
Received: Mar 27, 1998
Extracted: Mar 31, 1998
Analyzed: Apr 1, 1998
Reported: Apr 7, 1998

LABORATORY ANALYSIS FOR: TCLP Lead 1311/3010/7420

09/10/98
/Rat

| Sample Number | Sample Description | Detection Limit mg/L | Sample Result mg/L |
|---------------|--------------------|----------------------|--------------------|
| 803-1400 | FAA-1 | 0.50 | 0.64 |
| 803-1401 | FAA-2 | 0.50 | N.D. |
| 803-1402 | FAA-3 | 0.50 | 0.55 |
| 803-1403 | FAA-4 | 0.50 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection

GLA LABORATORIES


Crystal Pollock
Laboratory Director

ORIGINAL
(Red)

ATTACHMENT 2
RESULTS FOR SAMPLES FAC-10 AND FAC-11

Penn E & R
2755 Sergey Road
Hatfield, PA 19440
Attention: Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract
Soil FAC -10
Lab Number: 910-0380

Sampled: Oct 7, 1999
Received: Oct 7, 1999
Analyzed: Oct 12, 1999
Reported: Oct 18, 1999

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

| Analyte | EPA Method | Reporting Limit mg/L (ppm) | Sample Results mg/L (ppm) |
|---------------|------------|-------------------------------|------------------------------|
| Arsenic..... | 3010/6010B | 0.060 | N.D. |
| Barium..... | 3010/6010B | 0.020 | 1.5 |
| Cadmium..... | 3010/6010B | 0.010 | 0.041 |
| Chromium..... | 3010/6010B | 0.020 | N.D. |
| Lead..... | 3010/6010B | 0.10 | 3.4 |
| Mercury..... | 7470 | 0.0010 | N.D. |
| Selenium..... | 3010/6010B | 0.10 | N.D. |
| Silver..... | 3010/6010B | 0.020 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

~~GLA~~ LABORATORIES

Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention: Mike Christie

Client Project ID: LPT
Sample Descript: TCLP Extract
Soil FAC -11
Lab Number: 910-0381

Sampled: Oct 7, 199
Received: Oct 7, 199
Analyzed: Oct 12, 199
Reported: Oct 18, 199

TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP): METALS

ORIGINAL
(Ref)

| Analyte | EPA Method | Reporting Limit mg/L (ppm) | Sample Results mg/L (ppm) |
|---------------|------------|-------------------------------|------------------------------|
| Arsenic..... | 3010/6010B | 0.060 | N.D. |
| Barium..... | 3010/6010B | 0.020 | 1.9 |
| Cadmium..... | 3010/6010B | 0.010 | 0.038 |
| Chromium..... | 3010/6010B | 0.020 | N.D. |
| Lead..... | 3010/6010B | 0.10 | 0.39 |
| Mercury..... | 7470 | 0.0010 | N.D. |
| Selenium..... | 3010/6010B | 0.10 | N.D. |
| Silver..... | 3010/6010B | 0.020 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection.

GLA LABORATORIES

Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention: Mike Christie

Client Project ID: LPT
Sample Descript: Soil FAC-10
Analysis Method: EPA 8082
Lab Number: 910-0380

Sampled: Oct 7, 1999
Received: Oct 7, 1999
Extracted: Oct 8, 1999
Analyzed: Oct 13-14, 1999
Reported: Oct 18, 1999

POLYCHLORINATED BIPHENYLS (EPA 8082)

ORIGINAL
(Red)

| Analyte | Reporting Limit µg/kg | Sample Results µg/kg, dry wt |
|---------------|--------------------------|---------------------------------|
| PCB 1016..... | 150 | N.D. |
| PCB 1221..... | 150 | N.D. |
| PCB 1232..... | 150 | N.D. |
| PCB 1242..... | 150 | N.D. |
| PCB 1248..... | 150 | N.D. |
| PCB 1254..... | 150 | N.D. |
| PCB 1260..... | 150 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GLA LABORATORIES

Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention: Mike Christie

Client Project ID: LPT
Sample Descript: Soil FAC-11
Analysis Method: EPA 8082
Lab Number: 910-0381

Sampled: Oct 7, 1999
Received: Oct 7, 1999
Extracted: Oct 8, 1999
Analyzed: Oct 13, 1999
Reported: Oct 18, 1999

POLYCHLORINATED BIPHENYLS (EPA 8082)

| Analyte | Reporting Limit µg/kg | Sample Results µg/kg, dry wt |
|---------------|--------------------------|---------------------------------|
| PCB 1016..... | 150 | N.D. |
| PCB 1221..... | 150 | N.D. |
| PCB 1232..... | 150 | N.D. |
| PCB 1242..... | 150 | N.D. |
| PCB 1248..... | 150 | N.D. |
| PCB 1254..... | 150 | N.D. |
| PCB 1260..... | 150 | N.D. |

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

GLA LABORATORIES

Crystal Pollock
Laboratory Director

Penn E & R
2755 Bergey Road
Hatfield, PA 19440
Attention: Mike Christie

Client Project ID: LPT
Matrix Descript: Soil
Analysis Method: EPA 418.1 (I.R. with clean-up)
First Sample #: 910-0380

Sampled: Oct 7, 1999
Received: Oct 7, 1999
Analyzed: Oct 18, 1999
Reported: Oct 18, 1999

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS

ORIGINAL
(Red)

| Sample Number | Sample Description | Petroleum Oil mg/kg (ppm) Dry Wt. |
|---------------|--------------------|---|
|---------------|--------------------|---|

| | | |
|----------|----------|-----|
| 910-0380 | FAC - 10 | 210 |
|----------|----------|-----|

| | | |
|----------|----------|-----|
| 910-0381 | FAC - 11 | 210 |
|----------|----------|-----|

Reporting Limit:

50

GLA LABORATORIES

Crystal Pollock
Laboratory Director



"Frebowitz, Andrew"
<FrebowitzA@ttnus.com>

To: Joseph McDowell/R3/USEPA/US@EPA
cc:
Subject: Cinder/Slag Sample Plan

04/30/01 09:25 AM

Joe: Took a look at the site characterization plan for the cinder/slag area:

A map should be provided with the proposed test pit locations for both the extent investigation and the characterization sampling locations.

The method of test pits for the extent should be further detailed- will the pit continue completely around the perimeter until waste is encountered or are a series of pits anticipated. If so, what is the spacing?

What are the proposed dimensions of the pits for sampling?

They specify TCL/TAL parameters- the methods (CLP SOW?) should be specified in the plan. In addition, there is no QA plan- are QA/QC samples being collected?

I have mixed feelings about the sampling method (test pits). My concern is that they specify that samples will be obtained from the highest PID readings. A couple questions also arise from that- what bulb for the PID will be used, and how will locations be determined if no PID readings are found? Also, if they say samples will be submitted to ensure a vertical profile and they will submit those with elevated PID readings, that could lead to more than 6 samples- or one per trench as they propose. As far as collection method, I have some concerns of integrity of the samples particularly for VOCs (although it may be more advantageous for the metals because a biased sample could be obtained). I also have some safety concerns if they're trenching in the middle of uncharacterized lab waste. Consideration should be given to the use of Geoprobe (perhaps equipped with a platform for the workers to shield them from potential reactions from lab waste- i.e. picric acid). That way a total profile of the vertical extent could be obtained, all intervals screened with PID immediately after opening the sleeve and samples collected based on visual, PID and depth observations. If a sleeve does not appear to contain visible waste or PID readings, an alternate boring could be advanced.

Consideration should be given to collect a replicate sample to be held for potential TCLP analysis should results from TAL analysis reveal high lead.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

April 30, 2001

Michael Christie, P.G.
Vice President
Penn E&R
2755 Bergey Road
Hatfield, PA 19440

Dear Mr. Christie:

This letter is in reference to the *Proposed Site Characterization Activities for the Cinder/Slag Fill Area Located on LPT's Yellow Parcel*, submitted to EPA, PADEP, and Upper Merion Township by Penn E&R on April 27, 2001 for the Crater Resources Site ("Site"). The following comments are provided on this document.

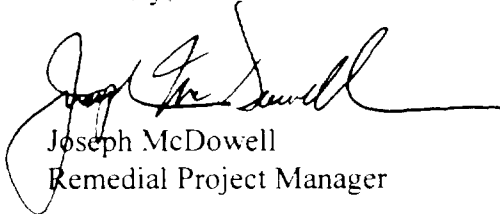
1. A map should be provided with the proposed test pit locations for both the extent investigation and the characterization sampling locations.
2. The method of test pits for the extent should be further detailed- will the pit continue completely around the perimeter until waste is encountered, or are a series of pits anticipated. If so, what is the spacing?
3. What are the proposed dimensions of the pits for sampling?
4. The plan specifies TCL/TAL parameters- the methods (CLP SOW?) should be specified in the plan. In addition, there is no QA plan- what QA/QC samples will be collected?
5. What bulb for the PID will be used, and how will locations be determined if no PID readings are found? If there are elevated PID readings throughout the trench, how will the samples be taken (i.e. will this result in more than one sample in each trench?). Lastly, the plan states that samples will be submitted to ensure a vertical characterization of the fill material is completed; it is unclear what this implies. Will the samples be discreet grab samples, or composite samples throughout the trench wall.
6. EPA also has some safety concerns if Penn E&R will be trenching in the middle of uncharacterized lab waste. Consideration should be given to the use of Geoprobe (perhaps equipped with a platform for the workers to shield them from potential reactions from lab waste- i.e. picric acid). That way a total profile of the vertical extent could be obtained, all intervals screened with PID immediately after opening the sleeve and samples collected based on visual, PID and depth observations. If a sleeve does not appear to contain visible waste or PID readings, an alternate boring could be advanced.

7. Consideration should be given to collect a replicate sample to be held for potential TCLP analysis should results from TAL analysis reveal high lead.

8. EPA is currently reviewing the revised HASP, and will advise as to the acceptability of this document via separate correspondence.

Please contact me at (215) 814-3192 should you have any questions or comments on this matter.

Sincerely,



Joseph McDowell
Remedial Project Manager

cc: A. Duchovanny (EPA)
D. Minsker (PADEP)
B. Hartlein (Liberty)
J. Bartlett (EAC)

ORIGINAL
1/24**Penn E&R**

Environmental & Remediation, Inc.

May 2, 2001
4013-20001

VIA FACSIMILE & REGULAR MAIL

Mr. Joseph McDowell
Remedial Project Manager
United States Environmental
Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Subject: Addendum to the Site Characterization for the Cinder/Slag Fill
Area Located on LPT's 2301 Renaissance Boulevard Property

Dear Mr. McDowell:

This addendum is being submitted in response to your April 30, 2001 letter which outlined the EPA's, PADEP's, and Upper Merion Township's comments regarding their review of the workplan developed by Penn E&R entitled "Proposed Site Characterization Activities for the Cinder/Slag Fill Area Located on LPT's Yellow Parcel", dated April 26, 2001. Our response to your comments are provided in the same order and format as they were listed in your letter.

1. A map showing the approximate locations of the soil borings (as discussed below and suggested in EPA's April 30th letter, soil borings will be installed rather than test trenches) to be installed in and around the cinder/slag fill area is included as Figure 1.
2. A series of soil borings installed around the perimeter of the cinder/slag fill area, as shown on Figure 1, will be used to delineate the extent of the fill material. The soil borings installed around the perimeter of the area will be spaced every 50 feet. Based on current estimated dimensions of the area, about 20 borings will be installed around the perimeter of the cinder/slag fill area. If fill is encountered in any of these initial perimeter borings, another boring will be installed five feet further out away from the cinder/slag fill area. This process will be continued until the extent of the fill material has been delineated. The borings will be advanced to a depth of 10 feet or native soil, whichever is encountered first.
3. The soil borings will be installed using a Geoprobe® drill rig. The borings will be 1 to 2-inches in diameter and will be advanced to a depth of 10 feet or native soil, whichever is encountered first.

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Mr. Joseph McDowell

May 2, 2001

Page 2

4. The samples will be analyzed by CompuChem, an EPA approved CLP laboratory located in Cary, NC. The TCL volatile and semivolatile organic analyses will be performed using USEPA Method OLM04.2 and the TAL inorganic (i.e., metals and cyanide) analyses will be performed using USEPA Method ILM04.2. For quality assurance/quality control purposes, a duplicate sample, a field blank, and a trip blank will also be submitted for analysis. The duplicate sample and the field blank will be analyzed for the TCL volatile and semivolatile organic compounds and the TAL inorganics, and the trip blank will be analyzed for the TCL volatile organic compounds.
5. As indicated in the aforementioned Site Characterization Work Plan (SCWP), six soil samples will be collected from the borings installed within the limits of the cinder/slag fill area and submitted for laboratory analysis. If no PID readings are encountered, the soil samples selected for analysis will be from the interval that is most representative of the fill material encountered in the soil boring. If more than one sample within a boring displays an elevated PID reading, the sample displaying the highest PID reading will be selected for analysis. Only discrete samples, generally consisting of soils from a defined 6-inch interval, will be collected. A 10.6 eV bulb will be used in our PID.
6. As indicated in the April 26 SCWP, the material in the cinder/slag fill area has been previously characterized on three occasions. As part of the initial site characterization, nine test trenches were installed through the fill material by Penn E&R in January 1998. Based on information obtained from the test trenches, the material in this area consists primarily of glass, ash, cinders, and slag. To evaluate the chemical makeup of the fill, Penn E&R collected a grab soil sample from test trench FT-3 at the approximate location shown on Figure 1 in the SCWP. This sample, which was designated FT-3, was collected from material that appeared to be most representative of the fill and from an area where elevated PID readings were detected. This sample location was the only area in the fill material where elevated PID readings were encountered. The sample was analyzed for the TCL volatile and semivolatile organic compounds and the TAL inorganics. The results of the analysis of this sample are summarized in Table 1 in the SCWP B. No volatile or semivolatile organic compounds were detected in this sample above PADEP Act 2 MSCs or USEPA generic SSLs. With the exception of arsenic and lead, no metals were detected in the fill at concentrations above Act 2 MSCs or USEPA generic SSLs. Arsenic was detected above its very restrictive USEPA generic SSL of 0.026 mg/kg but not above its Act 2 non-residential soil-to-groundwater MSCs. Lead was detected above both its Act 2 MSC and USEPA generic SSL.

To further characterize the fill material in the cinder/slag fill area, Penn E&R also collected one representative composite sample (sample FAA-5C/5G) of the fill material in March 1998. This sample was collected by first dividing the fill area into four quadrants (Quadrants FAA-1 through FAA-4 as shown on Figure 2 in the SCWP. Two sample aliquots from each quadrant were then collected at various depths. The individual sample aliquots were then thoroughly homogenized in a decontaminated stainless steel mixing bowl. A composite sample from the mixing bowl was then collected and placed directly into laboratory supplied sample bottles. This sample was designated FAA-5C/5G and was analyzed for the PADEP Form U Table A parameters. Penn E&R also collected one individual composite sample from each of the four quadrants. These samples were designated FAA-1 through FAA-4 (see Figure 2 in the

Mr. Joseph McDowell
May 2, 2001
Page 3

ORIGINAL
(Red)

SCWP) and each consisted of a composite of five individual aliquots collected from various depths from its corresponding quadrant. As lead was identified as the only contaminant of concern for potential leachability, these samples were analyzed for TCLP lead. The results of the analysis of sample FAA-5C/5G and samples FAA-1 through FAA-4 are included in Attachment C. A review of these results indicate that none of the PADEP Form U Table A parameters were detected above any EPA regulatory levels in sample FAA-5C/5G and TCLP lead was not detected above its EPA regulatory level in samples FAA-1 through FAA-4.

A third characterization of the fill material was conducted in October 1999 when two additional composite samples were collected from the cinder/slag fill area by Penn E&R. These samples were collected by first dividing the fill pile into two sections (Sections FAC-10 and FAC-11 as shown on Figure 3 in the SCWP). Four sample aliquots from various depths were then collected from each section. The four individual sample aliquots representing one of the sections were then thoroughly homogenized in a decontaminated stainless steel mixing bowl. A composite sample representative of the two sections was collected in this manner. These two samples were designated FAC-10 and FAC-11 and were analyzed for the TCLP metals, and PCBs and total petroleum hydrocarbons (TPHs). A copy of the results of the analysis of these samples is included in Attachment 2 in the SCWP. A review of these results indicates that none of the TCLP metals were detected above their EPA regulatory levels in the two samples. Also, no PCBs were detected above laboratory detection limits in the two samples and each sample displayed a low TPH level of less than 210 mg/kg.

Based on the aforementioned sample results, the fill material in the cinder/slag fill area is not characteristically hazardous. Also, as indicated above, elevated PID readings were only encountered in one of the test trenches installed in this area and a sample from this trench was submitted for analysis.

EPA has raised an issue with respect to lab glassware that was previously identified in a limited area of the fill. During Penn E&R's three investigations at the fill area described above, no evidence of any laboratory chemicals or lab waste, such as lab packs that might be associated with lab glassware, were identified. In particular, no evidence of picric acid has been identified in the cinder/slag fill area. Nevertheless, as you requested in your letter, Penn E&R will use a Geoprobe® drill rig to install soil borings around and through the fill material to define the limits of the cinder/slag fill area. Soil samples will be collected continuously from each boring using a 4-foot long macrocore sampler. Each soil sample will be visually inspected for signs of contamination and screened with a PID.

7. As indicated above, Penn E&R has collected a number of samples from the cinder/slag fill area. The results of this characterization sampling demonstrate that the material in this area is not characteristically hazardous. A sufficient volume of sample will be collected from each location should additional analyses be requested by LPT.
8. Penn E&R will respond under separate cover to the letter we received yesterday from the EPA regarding the Agency's review of the Site-Specific Health and Safety Plan (SSHSP) for Quarry No. 4. However, as we discussed this morning, although we may not agree with EPA's interpretation of the OSHA regulations as set forth in the comments regarding the

Mr. Joseph McDowell

May 2, 2001

Page 4

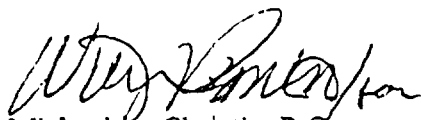
SSHSP, Penn E&R will perform personal air monitoring for lead during the on-site characterization activities and will provide appropriate training for lead hazards prior to the initiation of the work in the cinder/slag fill area.

We believe that this addendum fully addresses the comments and suggestions that the EPA, PADEP, and Upper Merion Township have provided regarding our proposed site characterization for the cinder/slag fill area. As indicated in my email to you yesterday and as we agreed this morning, Penn E&R will initiate the on-site characterization activities on Friday, May 4, 2001.

Should you have any questions regarding the contents of this letter or any other project related issues, or if you require additional information, please do not hesitate to call me.

Sincerely,

PENN ENVIRONMENTAL & REMEDIATION, INC.



Michael A. Christie, P.G.

Vice President

4013:epacsrlfml.doc

Enclosure

cc: Andy Duchovanny, EPA (w/enclosure)
Dave Minsker, PADEP (w/enclosure)
Andy Hartzell, PADEP (w/enclosure)
Joe Bartlett, UMT EAC (w/enclosure)
Bruce Hartlein, Liberty (w/enclosure)
Brenda Gotanda, Esq., MGK (w/enclosure)
Darryl Borrelli, MGK (w/enclosure)

(Red)

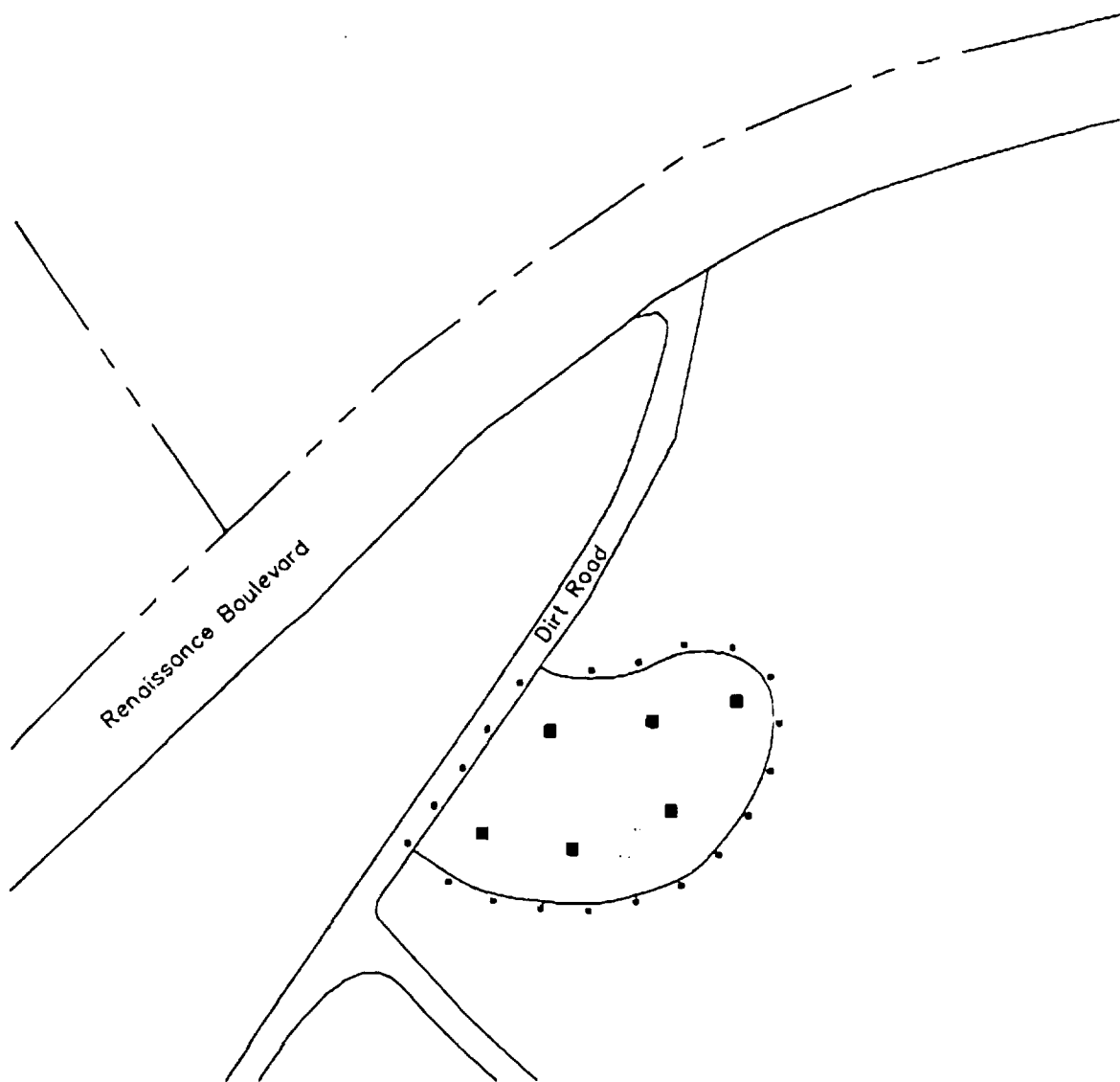


Figure 1
Map Showing Approximate
Locations At Which Soil
Borings Will Be Installed
Around and Through
The Cinder/Slag Fill Area

Notes:

- Approximate Location Of Perimeter Soil Boring
- Approximate Location of Interior Soil Boring

| | | |
|---|----------------|------------|
| DRAWN BY: DMA | DATE: 1-May-01 | SCALE: NTS |
| | | |
| <p>2755 Bergay Road Haltfield, Pennsylvania 19440 215-997-8000 fax-215-822-8575</p> | | |